

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patentee: Dennis Joseph Denen, et al. **Docket No.:** 4747-124C1N1/10401349

Patent No.: 7,102,366

Issue Date: September 5, 2006

Title: Proximity Detection Circuit and
Method of Detecting Capacitance Changes

Commissioner for Patents
Post Office Box 1450
Alexandria, VA 22313-1450

Attention: Certificate of Correction Certificate

REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 C.F.R. 1.322

Dear Sir:

Attached is Form PTO/SB/44, which lists errors in the Patent due to Office Mistakes (37 C.F.R. § 1.322).

Pursuant to 37 C.F.R. § 1.322, Patentee hereby requests that the errors listed below be corrected. The exact page/column and line reference in the patent where the corrections should be made are as follows:

Under the heading "**BRIEF DESCRIPTION OF THE DRAWINGS**":

In Column 4, lines 11-13, delete the words:

"FIG. 9A shows the square wave output at UIA, pin 1;

FIG. 9B shows the RC exponential waveforms at pins 5;

FIG. 9C shows the RC exponential waveforms at pin 6;"

and replace with the following words: -- FIG. 9 shows U1 waveforms at pin 1 (square wave A), pin 5 (exponential waveform B) and pin 6 (exponential waveform C); --

Under the heading **"DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS"**:

In Column 7, lines 43-45, delete the words "FIG. 9 shows U1 waveforms at pin 1 (square wave A), pin 5 (exponential waveform B) and pin 6 (exponential waveform C);"

In Column 7, line 42, after the words "locking bar 36." please add a separate paragraph as follows:

-- FIG. 4B is a side view of the locking bar showing the placement of the compression springs. The compression springs 70, 72 also tend to resist the release of the locking bar 36, insuring that a required force is needed to unlock the locking bar 36. The required force is typically between 0.5 lbf and 3.0 lbf, or more. In this embodiment, the force is 2.0 lbf when the spring is in a fully compressed position, and 1.1 lbf when the spring is in the rest position. In the rest position, the forces of the opposing springs offset each other. --

REMARKS

Supporting documentation is found on page 11 of amendment to the specification filed April 4, 2006 and in the original specification, page 11, lines 25-26, and page 12, lines 1-4 (see attached copies).

The Notice of Allowance dated April 24, 2006, also provides supporting documentation acknowledging receipt of the papers filed April 4, 2006.

The Director is authorized to charge the fee of \$-0- and any additional fee(s) or any underpayment of fee(s), or to credit any overpayments to Deposit Account **50-0337**. Please ensure that Attorney Docket No. 4747-124C1N1/10401349 is referred to when charging any payments or credits for this case.

Respectfully submitted,

Dated: October 24, 2006

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 7,102,366 B2
APPLICATION NO.: 10/783,677
ISSUE DATE : September 5, 2006
INVENTOR(S) : Joseph Denen Dennis, et. al.

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Under the heading "BRIEF DESCRIPTION OF THE DRAWINGS":

In Column 4, lines 11-13, delete the words:

"FIG. 9A shows the square wave output at U1A, pin 1;
FIG. 9B shows the RC exponential waveforms at pins 5;
FIG. 9C shows the RC exponential waveforms at pin 6;"

and replace with the following words: -- FIG. 9 shows U1 waveforms at pin 1 (square wave A), pin 5 (exponential waveform B) and pin 6 (exponential waveform C); --

Under the heading "DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS":

In Column 7, lines 43-45, delete the words "FIG. 9 shows U1 waveforms at pin 1 (square wave A), pin 5 (exponential waveform B) and pin 6 (exponential waveform C);"

In Column 7, line 42, after the words "locking bar 36." please add a separate paragraph as follows:

-- FIG. 4B is a side view of the locking bar showing the placement of the compression springs. The compression springs 70, 72 also tend to resist the release of the locking bar 36, insuring that a required force is needed to unlock the locking bar 36. The required force is typically between 0.5 lbf and 3.0 lbf, or more. In this embodiment, the force is 2.0 lbf when the spring is in a fully compressed position, and 1.1 lbf when the spring is in the rest position. In the rest position, the forces of the opposing springs offset each other. --

MAILING ADDRESS OF SENDER (Please do not use customer number below):

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Notice of Allowability

Application No.

10/783,677

Examiner

Timothy J. Dole

Applicant(s)

DENEN ET AL

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE filed April 4, 2006.
2. ☒ The allowed claim(s) is/are 1-3,6-17,19-27,29-31,33-37 and 39-52.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

In the Specification:

In the section entitled "BRIEF DESCRIPTION OF THE DRAWINGS", cancel paragraphs [0037] and [0038], and re-write paragraph [0036] as follows:

[0036] FIG. 9A-9 shows the square wave output U1 waveforms at U1A, pin 1 (square wave A), pin 5 (exponential waveform B) and pin 6 (exponential waveform C);

~~[0037] FIG. 9B shows the RC exponential waveforms at pins 5;~~

~~[0038] FIG. 9C shows the RC exponential waveforms at pin 6;~~

In the section entitled "DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS", amend paragraph [0075] as follows:

[0075] An embodiment of the invention comprises a balanced bridge circuit. See FIG. 8A. The component U1A 90 is a comparator (TLC3702 158) configured as an oscillator. The frequency of oscillation of this component, U1A 90, of the circuit may be considered arbitrary and non-critical, as far as the operation of the circuit is concerned. The period of the oscillator is set by the elements C.sub.ref 92, R.sub.hys 94, the trim resistance, R.sub.trim 96, where the trim resistance may be varied and the range resistors R.sub.range 152 are fixed. The resistors Rrange 152 allow limits to be placed on the range of adjustment, resulting in an easier adjustment. The adjustment band is narrowed, since only part of the total resistance there can be varied. Consequently a single potentiometer may be used, simplifying the adjustment of R.sub.trim 96. A value for R.sub.range 152 for the schematic shown in FIG. 8A might be 100 k.OMEGA.. R.sub.trim 96 might have an adjustment range of 10 k.OMEGA. to 50 k.OMEGA.. The output signal at pin 1 98 of component U1A 90 is a square wave, as shown in at line A of FIG. 9A-9. C.sub.ref 92 is charged by the output along with ANT 100, both sustaining the oscillation and measuring the capacitance of the adjacent free space. The signals resulting from the charging action are applied to a second comparator, U1B 102, at pin 5 104 and pin 6 106 (FIG. 8A). These signals appear as exponential waveforms, as shown ~~in FIG. 9B and FIG. 9C at lines B and C of FIG. 9.~~

[0033] FIG. 4A shows the dispenser case 48 with the carousel assembly 30 and transfer bar 44. The carousel assembly 30 is fully loaded with a main roll 66 and a stub roll 68, both mounted on the carousel arms 32 and rotate on the rotating reduced friction paper towel roll hubs 34 (only shown from the back of the carousel arms 32). In the carousel assembly 30, the two carousel arms 32, joined by corresponding bars 40 and cross members 42, rotate in carousel fashion about a horizontal axis defined by the carousel assembly rotation hubs 38. The locking bar 36 is supported, or carried, by a corresponding bar 40. The corresponding bar 40 provides structural rigidity and support. The locking bar 36 principally serves as a locking mechanism. Each paper towel roll 66, 68 has an inner cardboard tube which acts as a central winding core element, and which provides in a hole in paper towel roll 66, 68 at each end for engaging the hubs 34.

[0034] FIG. 5 shows the carousel assembly 30 in exploded, perspective view. The number of parts comprising this assembly is small. From a reliability point of view, the reliability is increased. From a manufacturing point of view, the ease of manufacture is thereby increased and the cost of manufacture is reduced. The material of manufacture is not limited except as to the requirements of cost, ease of manufacture, reliability, strength and other requirements imposed by the maker, demand.

[0035] When the main roll, 66 (FIG. 4A) and the stub roll 68, (FIG. 4A) are in place, the carousel arms 32 are connected by these rolls 66 and 68 (FIG. 4A). Placing cross-members 42 to connect the carousel arms 32 with the locking 36 and corresponding 40 bar results in better structural stability, with racking prevented. The locking bar 36, which was shown as a single unit locking bar 36 in the previous figures, acts as a locking bar 36 to lock the carousel assembly 30 in the proper orientation. It acts also as the release bar, which when released, allows the carousel assembly 30 to rotate. Two compression springs 70, 72 are utilized to center the locking bar 36.

[0036] FIG. 4B is a side view of the locking bar showing the placement of the compression springs. The compression springs 70, 72 also tend to resist the release of the locking

bar 36, insuring that a required force is needed to unlock the locking bar 36. The required force is typically between 0.5 lbf and 3.0 lbf, or more. In this embodiment, the force is 2.0 lbf when the spring is in a fully compressed position, and 1.1 lbf when the spring is in the rest position. In the rest position, the forces of the opposing springs offset each other.

[0037] The actual locking occurs as shown in FIG. 4C. The locking bar 36 closest to the rear of the casing 48 is adapted to fit into a generally u-shaped mating structure 118 which is adapted to hold the locking bar 36 and prevent it and the carousel assembly 30 from rotating. When the locking bar 36 is pulled away from the rear of the casing 48, the locking bar 36 is disengaged from the mating structure 118. The mating structure has an upper "high" side 120 and a lower "low" side 122, where the low side has a "ramp" 124 on its lower side. As the locking bar 36 is pulled out to clear the high side 120, the carousel assembly 30 is free to rotate such that the top of the carousel assembly 30 rotates up and away from the back of the casing 48. As the carousel assembly 30 begins to rotate, the user releases the locking bar 36 which, under the influence of symmetrically placed compression springs 70, 72 returns to its rest position. As the carousel assembly rotates, the end of the symmetrical locking bar 36 which originally was disposed toward the user now rotates and contacts the ramp 124. A locking bar spring, e.g., 70 or 72, is compressed as the end of the locking bar 36 contacting the ramp 124 now moves up the ramp 124. The end of the locking bar 36 is pressed into the space between the low side 122 and the high side 120, as the end of the locking bar 36 slides past the low side 122. A locked position for the carousel assembly 30 is now reestablished.

[0038] FIG. 5 shows the carousel arms 32 adapted to receive the loading of a new roll of towel 66 (FIG. 4A). The arms 32 are slightly flexible and bent outward a small amount when inserting a paper towel roll 66 (FIG. 4A) between two opposite carousel arms 32. A friction reducing rotating paper towel roll hub 34 is inserted into a hole of a paper towel roll 66 (FIG. 4A), such that one roll hub 34 is inserted into a hole on each side of the paper towel roll 66 (FIG.